DOCUMENT RESUME

ED 193 186 SP 016 755

AUTHOR	Arnold, Justine; Grogan, Jane, Ed.
TITLE	Nutrition: Yesterday, Today, and Tomorrow. New Horizons in Nutrition.
INSTITUTION	Luzerne Intermediate Unit 18, Kingston, Pa.
SPONS AGENCY	Pennsylvania State Dept. of Education, Harrisburg. Bureau of Curriculum Services.
PUB DATE	80
NOTE	19p.; For related documents, see SP 016 752-761.
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	Adolescents; *Dietetics; *Eating Habits; Family Environment; Habit Formation; Health Education; Infants; *Nutrition Instruction; Older Adults; *Physical Health; Pregnancy; Secondary Education; *Self Care Skills

ABSTRACT

This instructional handbook is one of a series of ten packets designed to form a comprehensive course in nutrition for secondary students. This unit considers the fact that eating habits developed early in life have a lifetime effect on health. Special emphasis is placed on the effect of these early habits on pregnancy, adolescence, infancy and the older adult years. It contains a page of teaching suggestions, a pre-test for the students, and factual nutrition information with examples of how this information can be used in daily living. A post-test and bibliography are included. (JD)

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NEW HORIZONS IN NUTRITION

AN ISSUE ORIENTED APPROACH

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DEVELOPED THROUGH A NUTRITION EDUCATION AND TRAINING GRANT FROM THE PENNSYLVANIA DEPARTMENT OF EDUCATION TO

LUZERNE INTERMEDIATE UNIT 18
368 Tioga Avenue
Kingston, Pennsylvania 18704

Summer, 1980

ACKNOWLEDGMENTS

The project staff wishes to express their sincere appreciation to the following teachers who assisted with the field testing of these instructional packets.

GREATER NANTICOKE AREA SCHOOL DISTRICT
LOUISE HUDAK
JOHN KASHATUS
THEODORE WIATEROWSKI

HANOVER AREA SCHOOL DISTRICT
MARIE DRUFFNER
ROSEMARY KOCHER
MARY ANN MACIUN
MARY SUE MITKE

HAZLETON AREA SCHOOL DISTRICT
ELIZABETH ABERNATHY
ANNE CONNOR
ROBERT R. WILLIAMS

LAKE LEHMAN SCHOOL DISTRICT
LYNN EVANS
JERI JONES
EMMA MATZ

WILKES-BARRE AREA SCHOOL DISTRICT
FIORA SHRADER

WYOMING VALLEY WEST SCHOOL DISTRICT
ESTELLE FREEDMAN
MIRIAM HANNON
MARGE KELLY
REGINA TIRPAK
DOLORES WEISS

PROGRAM INTRODUCTION

These ten instructional packets are designed to help you make the science of nutrition a fascinating, relevant topic of study for your students. The study of nutrition is the most basic of all skills as eating is something done by every student every day of his or her life. With the intrinsic relationship between proper nutrition and good health, it is vitally important that we help students to make intelligent decisions with regard to what they eat.

The ten packets which make up New Horizons in Nutrition can be taken together to form a comprehensive course in nutrition for secondary students. If you prefer, individual packets can be used when they're relevant to specific topics in health, home economics, science, or social studies classes. In addition, you can use the materials with entire classes or individual students can be given the packets for self-directed study.

Each packet contains a page of teaching suggestions which can easily be detached before the rest of the booklet is given to the students. The materials for the students include a pre-test, a selection which provides the students with factual information and examples of how this information can be utilized in everyday life, and a post test. Reading the selections and completing the evaluation devices is not enough to insure mastery of the concepts. We urge you to reinforce the packets by following through with related classroom activities. You'll find suggestions in the "Notes to the Teacher" or use them as a springboard to develop activities more ideally suited to the needs of your students. Finally, brief bibliographies are provided with each packet which lists related readings and audiovisual materials.

These suggested materials are not meant to be used as a research bibliography. Rather, they are sources of additional information which are likely to be of interest to secondary students.

The topics of the ten packets are:

1. *Advertising*
2. *Back to Basics*
3. *The Emotional Aspects of Nutrition*
4. *Food Faddism*
5. *Low Carbohydrate Diets*
6. *Nutrition and the Athlete*
7. *Nutrition: Yesterday, Today, and Tommorrow*
8. *Social Issues in Nutrition*
9. *Vegetarianism*
10. *Vitamin C and the Common Cold*

We sincerely hope these packets help you to make nutrition education an alive, relevant, and exciting topic of study for you and your students. The benefits for everyone are well worth your effort.

The Authors

TEACHING NOTES

INTRODUCTION

It is very important that students understand that the eating habits which they develop early in life can have a lifetime effect on their health. This packet considers this fact with a special emphasis on pregnancy, infancy, adolescence, and the senior citizen years.

OBJECTIVES

1. Students will recognize that their current eating habits will affect their health in future years.

2. Students will identify special nutritional considerations during specific phases of the life cycle.

ACTIVITIES

1. A few students can interview their grandparents to find out how the available foods and their food habits have changed throughout their lives.

2. Working in small groups, students can gather information on nutritional services available for special groups (e.g. W.I.C., Meals on Wheels, Senior Citizen Markets, etc.,). Compile this information into a flyer and make it available to the community.

3. Invite a dental hygienist to class to discuss preventive measures to insure good dental health throughout life.

4. Allow high school students to prepare some instructional posters dealing with nutrition which can be used in the cafeteria of a nearby elementary school.

PRE TEST KEY

1. F
2. F
3. T
4. F
5. T
6. T
7. F
8. F
9. F
10. T

POST TEST KEY

1. Answers to items
2. 1 - 3 may vary
3. See packet
4. T
5. F
6. F
7. T
8. F
9. T
10. T

BIBLIOGRAPHY

Cornell University. NUTRITION FOR THOSE WITH SPECIAL NEEDS: PREGNANT WOMEN' INFANTS AND YOUNG CHILDREN (Flip charts, lesson plans, cassettes and handouts)

March of Dimes. INSIDE MY MOM (Film strip and cassette)

BIBLIOGRAPHY (cont'd)

Parents Magazine Films. FEEDING TO NOURISH AND LOVE (Multimedia kit)

Tupperware Educational Services. FOOD TO GROW ON: NUTRITION FROM NEW-BORN THROUGH TEENS (Multimedia kit)

Tupperware Education Services. FOOD TO LIVE ON: NUTRITION FROM THE TWENTIES THROUGH THE NINETIES (Multimedia kit).

PRE TEST

1. _____ The most influential factor in our development of food habits is our circle of friends.

2. _____ As adults get older, their protein requirements continue to decrease.

3. _____ The first semisolid food introduced to infants is cereal.

4. _____ As long as a woman takes the vitamin/mineral supplements recommended by her doctor, she need not be concerned with her diet during pregnancy.

5. _____ An adequate intake of fluids and fruits and vegetables high in fiber will help to prevent constipation during pregnancy.

6. _____ Teenage girls are often the most poorly nourished members in a family.

7. _____ Children should not be allowed any snacks between meals.

8. _____ It is possible by bottle feeding to provide infants with immunity factors against certain diseases.

9. _____ Since elderly persons are often very concerned with their health, it is usually easy to persuade them to improve their diet.

10. _____ Eating patterns during the teenage years can affect health throughout life.

NUTRITION: YESTERDAY, TODAY, AND TOMORROW

DEVELOPMENT OF FOOD HABITS

The reason why we select some foods and avoid others are numerous. Food habits are a result of many personal, cultural, social, and psychological influences. But the greatest factor influencing our eating patterns is the family. The mother especially sets the pattern for the food habits that will be developed by the children, for she is the one who plans the meals, purchases the food, prepares it, and serves it. Her values have been developed in the environment in which she grew up, and are based upon income, geographic region from which she came, level of education, tradition, culture and knowledge of nutrition.

The family, which creates an atmosphere of security and contentment, reinforces the positive value of food. On the other hand, in an environment of hostility, anger, tension, unpleasant images are associated with food.

Children can be influenced by the foods that are popular with their peers. They may scorn foods they have liked because they are not a part of the current pattern of other children. However, peer influence may force them to try unfamiliar foods.

Food may serve as a reward or a bribe. We reward ourselves with the special dessert, the expensive meal, or the ice cream sundae. Food may be used as punishment. The child who behaves badly may be deprived of dessert.

We tend to categorize foods. Peanut butter and jelly are good foods for children. Hamburgers, hot dogs, and pizza are currently fashionable for teen-agers. Light food, such as souffles, salads, fruits, and vegetables are appealing to women, whereas men prefer meat, potatoes and pie.

Food can provide an emotional outlet. Eating may help us through a stress period in our life; a quarrel with a friend, no date for that special event, the hard examination, or the death of a loved one.

Security may also be involved in our food selection. Certain foods evoke childhood memories of love and security, so when we are upset we turn to the food that gives us those fond memories.

TV influences our eating habits. The commercials, that sponsor our favorite shows, persuade us to buy one product after another. Children are particularly susceptible to this form of advertising. All the "junk" food and the sugar coated cereals can be seen on the shows which attract children.

EFFECTS OF FOOD HABITS

Whatever our reasons, we do tend to select certain foods and reject others. This is done with little thought to the over-all effect on our health. We may reward ourselves once too often, or we may eat our way through too many emotional crises. The result of all of this may be a gain in weight. Sometimes we are not aware that those extra pounds are adding up, and before we know it, obesity can become a real threat to our present health. Many future complications can also arise from this added weight.

All that extra sugar in those nice rewards can cause a number of problems. The teeth may be the first to be affected. That abundant sucrose attacks the enamel of the teeth and leads to dental caries or decayed teeth. It may eventually necessitate pulling of the teeth. Before you reach for that reward, think of the permanent effect it will have on your smile.

Diet can have a great influence on cardiovascular disease. The amount and the type of fat can lead to elevated levels of ***blood lipids*** (fat and fat-related products). Extra sucrose can also effect the lipid levels, because all the extra sugar is changed into fat within the body. This fat can be deposited within the arteries. The build-up can affect the amount and flow of blood and can lead to heart problems.

Obesity may also lead to cardiovascular complications. Extra weight makes the heart work harder. As the work gets harder, the pressure of the blood increases. This produces high blood pressure or hypertension.

Diabetes may also be a complication of obesity, especially the maturity onset type. Frequently weight loss can help control diabetes and cardiovascular complications. If weight loss is not sufficient to control the disorders, then a special diet would be necessary. For the diabetic it would mean giving up all of the sweets.

Anemia is a frequent finding traceable to faulty food habits. To prevent anemia we need lots of iron. This element can be found in liver and meats, dark-green vegetables, fruits, especially the dried fruits, and enriched and whole-grain breads and cereals. Using sweets to the exclusion of fruits and vegetables will lower the blood level of iron.

Cancer of the intestinal tract is also a result of poor eating habits. In the United States, the consumption of sugar has increased and the consumption of fruits and vegetables has decreased. This means that there is not enough fiber in many of our diets. Fiber is needed to move the food mass through the digestive system. Without fiber the mass will ferment in the intestines, and this may cause cancer.

What we eat today can influence our health tomorrow, and can affect the quality of our future life.

PREGNANCY

One of the greatest determinants of the outcome of pregnancy is the status of the mother prior to conception. The teenage years are especially important and can have a profound influence on the health of our future children. Good nutrition during this time is vital for a normal, healthy pregnancy. Nourishing an unborn baby starts before pregnancy begins. Shortly after conception, the body stores begin to nourish the developing fetus. If there are not enough nutrients stored, then there is little to give to the developing child. It is important to identify malnourished women and rehabilitate them prior to conception or as soon as possible after conception, through the provision of food, nutritional counseling and good prenatal care. After conception, a healthy pattern of growth depends on the food that the mother eats every day. If eating habits are good, then all that is necessary is a slight increase in the amount of the food. If eating habits are poor, then they must be changed.

NUTRITION STARTS AT THE VERY BEGINNING

Eating a variety of foods each day is the best way to make certain that the mother and the fetus are receiving all the necessary nutrients. This way the health of the mother is maintained, and the child will receive the protein, calories, vitamins (A, B-complex, C, D, E and K), and minerals needed for growth and development. Iron supplements may be recommended by the doctor at this time to provide the infant with the iron supply necessary to carry it through the first three months after delivery.

It is essential that women eat properly during pregnancy, before pregnancy and after pregnancy. Children should also be trained to eat right, not only for their own sake, but also for the health of future generations

The Basic Four Food Groups should be followed with a slight increase in the amount of foods.

The Milk Group - four 8 ounce cups per day are required. Milk is necessary for the bones and the teeth, and for the nerves and the muscles. Milk will supply protein, vitamins, and minerals.

The Meat Group - 3 servings per day for the first three months; 4 servings per day for the next six months. This group supplies protein, the basic building material for mother and baby. Protein also combines with iron found in this group to form hemoglobin. The Meat Group also supplies some vitamins.

The Fruit-Vegetable Group - 4 servings per day. Include 2 servings per day of a leafy green vegetable; 1 serving per day of vitamin C high fruits and vegetables; and 1 serving each day of other fruits and vegetables. A good snack is shredded raw carrots mixed with raisins. This group provides vitamins, minerals, and fiber.

The Bread-Cereal Group - 4 servings, per day. This group includes breads, cereals, crackers, pastes (macaroni, spaghetti, noodles), rice, tortillas, wheat germ, etc. This group contributes iron and vitamins to the diet.

The food should be divided into three meals per day. However, if a woman feels that smaller meals are better for her, then the food may be divided into 4, 5 or 6 meals per day. The most important thing to remember is to include all of the nutrients that are needed each day. The division is individual preference.

Snacks are permissable, but choose foods that add to the day's nutrient intake. "Junk" foods and foods with "empty calories" should be avoided. These foods add nothing to the nutritive value of the diet, and detract from health and well-being.

Include several glasses of water each day, alone and in other fluid mixtures. Water helps the body utilize the nutrients from food, it carries waste products from the body, and it helps regulate body temperature.

An occasional drink is alright if the general health of the individual permits it. However, too much alcohol can damage the unborn child, and may affect the mother's health. Caffeine should also be

avoided at this time. Recent research indicates that caffeine may damage the unborn child. Alcohol and caffeine should be watched carefully.

Good nutrition is very important at this time. Fad diets must be carefully avoided. Even if someone is overweight, avoid dieting until the baby is born. It is impossible to meet the increased needs of pregnancy and follow a reduction diet at the same time. Dietary restriction to limit weight gain is seldom, if ever, advisable during pregnancy.

INFANT NUTRITION

Should an infant be breast fed or bottle fed? The controversy continues over this age old argument. There are pros and cons on both sides, and the decision is up to the individual. Before the decision is made, however, the advantages of both types of feeding must be considered carefully in relation to the needs of the family.

Breast feeding gives a safe and protected feeling to the infant, and a sense of satisfaction to the mother. As a rule, there are fewer and less serious illnesses and feeding problems among breast fed infants. Also, constipation occurs less frequently. Breast feeding eliminates the need for preparation. The milk is available at the proper temperature, and errors in calculation and in formula preparation are avpided.

During the first few days after delivery, the clear, yellowish secretion that flows from the breast is not a mature milk, but a substance richer in protein and vitamin A than the milk secreted later. This secretion is important because it apparently confers an immunity to certain infections during the first few months, and it aids in the development of the digestive enzymes.

In some families, there may be a possible advantage to bottle feeding because other family members may have a strong desire to help in caring for the infant. Also the increasing number of working mothers may make bottle feeding more convenient. If a mother has been sick during the pregnancy, lactation may place a great physical strain on her and should not be undertaken. If the mother has a chronic illness, or if another pregnancy ensues, or if the infant is weak or premature, bottle feeding may be indicated. In some cases, the mother may have an inadequate milk supply for the infant, and breast feeding alone would not be adequate.

No uniformity of opinion exists concerning the time and sequence at which supplements are added. Cereals are often the first semisolid foods given to the baby, at approximately 2 to 4 months. By the

third to fifth month, egg yolk is introduced. Small amounts are used at first, and egg white is never given before 8 to 10 months of age. Strained fruits are usually given by the third or fourth month, and by the end of the first year, these fruits may be chopped. Strained vegetables are added around the fourth month, and chopped vegetables around 11 months of age. Meats are introduced at approximately the seventh month, and when the child is accustomed to strained meats and meat soups, he/she may be given ground meat.

When teeth arrive and the child can chew foods, the amount of milk should be reduced. Around 1 year of age, 2 to 3 cups of milk per day is sufficient. If milk is the only food, or milk is used to substitute for other foods, anemia can develop. Milk is low in iron and it should not be used to the exclusion of foods that are rich in iron.

NUTRITION DURING CHILDHOOD

The four Food Groups constitute a sound basis for planning the daily meals during childhood. Most young children are more likely to obtain all the dietary essentials if they are fed something in the middle of the morning and the afternoon. However, snacks should make a liberal contribution to one or more of the nutrients needs. Some snacks suggestions are:

Fruit Juices without sugar	Crackers with peanut butter
Milk and milk beverages	Molasses, oatmeal, or peanut butter cookies
Fruit of any kind	Dry cereal from the box or with milk
Raw vegetables	Cheese wedge
Small sandwiches	Fruit sherbet or ice cream

It is extremely important that children avoid concentrated sweets. These sweets may be allowed to replace essential items in the diet, and this will lead to nutritional deficiences. Also, the concentrated sweets may cause obesity and produce a life long weight problem in the child. The childhood years are the formative years and establish our eating patterns for life. Remember, good eating patterns produce good health and poor eating patterns produce poor health. Which will it be?

ADOLESCENT NUTRITION

Even boys and girls who have had an excellent dietary pattern are likely to succumb to bizarre, unbalanced diets during the adolescent years. Failure to maintain normal weight is a frequently recurring problem. Most girls want to weigh less, and most boys want to weigh more. Boys equate overweight with muscle development which they see as being desirable.

Stresses of various kinds can have an adverse effect on nutrition. The incidence of TB is believed to

occur more frequently in those who have inadequate diets, especially with respect to calcium and protein. Many teen-age girls become pregnant before they have completed their own body growth. The stress of pregnancy can have serious effects on the girls who has had a poor intake of protein, calcium and iron during the preceding years.

Because of their high energy requirements, boys are more likely to meet their nutrient needs than g rls. Green leafy and deep-yellow vegetables should be emphasized. In addition girls need to increase their intake of milk and whole-grain or enriched breads and cereals. Snacks furnish about one-fourth of the energy requirements. They should also furnish protein, minerals, and vitamins. Thus, sandwiches, hamburgers, pizza, fruit, and milk are snacks to be encouraged. Once again emphasis should be placed on the Basic Four Food Groups.

NUTRITION AND THE ELDERLY

Our older years represent the culmination of our past life. Our nutrition at age 60, 70 or 80 is the product of our heredity, environment and nutrition in the entire preceding years. The individual who has had a lifetime of poor nutritional habits is not likely to be in as good health as one who has enjoyed the benefits of a good diet. Good diet in later years cannot completely make up for the years of inadequacy. Nor can an older individual completely change his whole pattern of eating. Nevertheless, great benefits can be derived through the application of the principles of good nutrition.

For each decade after 25 years, the caloric requirement is reduced. This means that people must choose their diets more carefully. The Basic Four Food Groups are a good plan to follow . This diet furnishes about ¾ of the total kilocalories needed daily, so there is still room for the favorite dishes of older people.

The protein requirement remains the same throughout adult life. There is no decrease as we age. Concentrated sweets should be avoided, because the body's ability to handle glucose decreases as we get older. Concentrated sweets present more glucose than the body can handle. Frequently elderly people are diagnosed as diabetic, when it is simply an over consumption of sweets.

Fat digestion slows down, so meals high in fat should be avoided. Toomuch fat at any one time can cause digestive disturbances.

The allowances for vitamins are the same as those for younger adults. The calcium requirement remains the same, but the iron requirement for women decreases to 10 mg per day. Because anemia is a

common occurence in many men and women, iron supplements are sometimes prescribed.

About 6 to 8 glasses of fluid is essential for the elderly. The kidneys function better when there is sufficient fluid. Water aids in combating constipation.

Older people, like young individuals, should eat food that provide fiber. Fiber can be found in fresh fruits and vegetables and whole-grain breads and cereals. These will also aid in combating constipation, and eliminate the need for laxatives.

The older person tends to follow the dietary patterns of his/her earlier years. He or she has been influenced by the many factors which determine food acceptance from infancy throughout life. By the time middle age is reached, these patterns are fixed, and it is difficult to change the patterns of eating. Many older people labor under the mistaken notion that their food needs are small because they no longer have growth needs. They are particularly susceptible to the claims of the food faddist. They are misled by claims for "miracle" diets and drugs. This can result in a waste of money, of which they have little to waste, and it can make the individual delay too long in seeking proper medical advice.

SUMMARY

We all reflect our eating habits, and these are formed very early in life. Our family greatly influences our choice of food. Good eating habits established when we are young can set us on a life long path to good health. Poor eating habits can upset our health and prevent us from reaching our full potential. The choice is yours!

QUESTIONS FOR THOUGHT

Assume that a very good friend of yours discovers that she's pregnant. How would you respond to the following questions:

1. What particular risk does she face as a pregnant teenager?

2. How might you encourage her to seek medical attention immediately?

3. If she mentioned to you that she was dieting in an effort to conceal the pregnancy, what would you say to her?

4. Find out what community services are available in your area for pregnant women. List the agencies, their services, and eligibility requirements.

Imagine that your elderly grandmother has come to live with you and your parents. She seems to have lost interest in eating, and your parents are concerned. Consider your response to the following questions.

1. What special nutritional considerations should be taken into account with the elderly.

2. Using the Basic Four Food Groups as a guide, plan a day's menu for your grandmother.

3. Besides providing nutritious food, discuss how the atmosphere at mealtime can influence your grandmother's interest in food. What can you do to make the atmosphere more pleasant?

4. What community services are available for elderly persons in your area?

POST TEST

1. List three factors which influence the development of food habits.

   a.

   b.

   c.

2. Lish three advantages of breast feeding.

   a.

   b.

   c.

3. What are five snack foods which are nutritious but which are also likely to appeal to young children?

   a.

   b.

   c.

   d.

   e.

4. _____ Iron is one nutrient that women require in decreasing amounts as they get older.

5. _____ All women are able to breast feed their infants.

6. _____ Meat and fish are excellent sources of fiber in the diet.

7. _____ Tooth decay can be prevented by proper dental hygiene, diet, and regular check-ups.

8. _____ Caloric intake should remain stable until age 65 when the need for calories decreases.

9. _____ Elderly persons are often easily mislead by food quackery.

10. _____ Young children who drink too much milk and avoid other foods are in danger of becoming anemic.